REMARKS/ARGUMENTS

Claims 7-16 are pending in this application.

Claims 7-11 and 13-16 were rejected under 35 U.S.C. § 102(b) as being anticipated by O'Connor et al. (U.S. 5,705,117). Claims 7-11 and 13-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiff et al. (US 5,173,220). Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over either O'Connor et al., or Reiff et al., and further in view of Takeshi (JP 2001-237616). Applicant respectfully traverses the rejections of Claims 7-16.

Claim 7 recites:

> A method for manufacturing a three-dimensional photonic structure comprising a plurality of inorganic members composed of an inorganic material and a resin matrix within which the plurality of inorganic members are disposed, the resin matrix being composed of a photo-cured resin material, the method comprising the steps of:
>
> preparing the plurality of inorganic members and a photocurable resin material;
>
> **successively and repeatedly performing a stereolithographic step for curing stacked layers composed of the photocurable resin material along a stacking direction to form a three-dimensional component such that cavities filled with the photocurable resin material are formed at locations to be occupied by the inorganic members in the three-dimensional component having a structure in which the plurality of cured resin layers composed of the photo-cured resin material are stacked;**
>
> inserting the inorganic members into concave portions when the concave portions are formed before closing the cavities during the stereolithographic step, each of the concave portions being at least a portion of the corresponding cavity and having an opening through which each of the inorganic members can pass, each gap between the surface of each of the concave portions and the corresponding inorganic member being filled with the photocurable resin material; and
>
> thermally curing the photocurable resin material remaining in the cavities. (emphasis added)

The Examiner alleged that O'Connor et al. teaches all of the features recited in Applicant's Claim 7, and that Reiff et al. teaches all of the features recited in Applicant's

Claim 7, except for the step of providing a plurality of inorganic members. The Examiner further alleged that it would have been obvious to provide a plurality of inorganic members in the process of Reiff et al. "principally in order to manufacture a desired three-dimensional structure." Applicant respectfully disagrees.

Each of O'Connor et al. and Reiff et al. is directed to a method of combining metal and ceramic inserts into a stereolithography component. However, neither the method taught by O'Connor et al. nor the method taught by Reiff et al. includes any step of "successively and repeatedly performing a stereolithographic step for curing stacked layers composed of the photocurable resin material along a stacking direction to form a three-dimensional component **such that cavities filled with the photocurable resin material are formed** at locations to be occupied by the inorganic members in the three-dimensional component having a structure in which the plurality of cured resin layers composed of the photo-cured resin material are stacked" (emphasis added) as recited in Applicant's Claim 7.

As disclosed in col. 3, line 64 to col. 5, line 20 of O'Connor et al. and in col. 3, line 20 to col. 4, line 40 of Reiff et al., both O'Connor and Reiff et al. teaches a method in which a laser is used to selectively cure a curable liquid material into a desired shape having a cavity into which an insert is disposed after the formation of the cavity. However, O'Connor et al. and Reiff et al. fail to teach or suggest (1) any step in which cavities are filled with a photocurable resin material prior to an inorganic member being disposed in each of the cavities, (2) that such a step of filling cavities with a photocurable resin material could or should be employed, or (3) any technical reason to employ a step of filling cavities with a photocurable resin prior to an inorganic member being disposed into each of the cavities or any advantages that are obtained thereby.

Thus, contrary to the Examiner's allegations, O'Connor et al. and Reiff et al. certainly fail to teach or suggest the feature of "successively and repeatedly performing a stereolithographic step for curing stacked layers composed of the photocurable resin material along a stacking direction to form a three-dimensional component **such that**

cavities filled with the photocurable resin material are formed at locations to be occupied by the inorganic members in the three-dimensional component having a structure in which the plurality of cured resin layers composed of the photo-cured resin material are stacked" (emphasis added) as recited in Applicant's Claim 7.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of Claim 7 under 35 U.S.C. § 102(b) as being anticipated by O'Connor et al., and the rejection of Claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Reiff et al.

The Examiner relied upon Takeshi to allegedly cure deficiencies of O'Connor et al. and Reiff et al. However, Takeshi fails to teach or suggest the feature of "successively and repeatedly performing a stereolithographic step for curing stacked layers composed of the photocurable resin material along a stacking direction to form a three-dimensional component **such that cavities filled with the photocurable resin material are formed** at locations to be occupied by the inorganic members in the three-dimensional component having a structure in which the plurality of cured resin layers composed of the photo-cured resin material are stacked" (emphasis added) as recited in Applicant's Claim 7. Thus, Applicant respectfully submits that Takeshi fails to cure the deficiencies of O'Connor et al. and Reiff et al. described above.

Accordingly, Applicant respectfully submits that O'Connor et al., Reiff et al., and Takeshi, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicant's Claim 7.

In view of the foregoing remarks, Applicant respectfully submits that Claim 7 is allowable. Claims 8-16 depend upon Claim 7, and are therefore allowable for at least the reasons that Claim 7 is allowable.

In view of the foregoing remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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/Christopher A. Bennett, #46,710/
Attorneys for Applicant

KEATING & BENNETT, LLP
1800 Alexander Bell Drive, Suite 200
Reston, VA 20191
Telephone: (571) 313-7440
Facsimile: (571) 313-7421

Joseph R. Keating
Registration No. 37,368

Christopher A. Bennett
Registration No. 46,710